FIG. 1

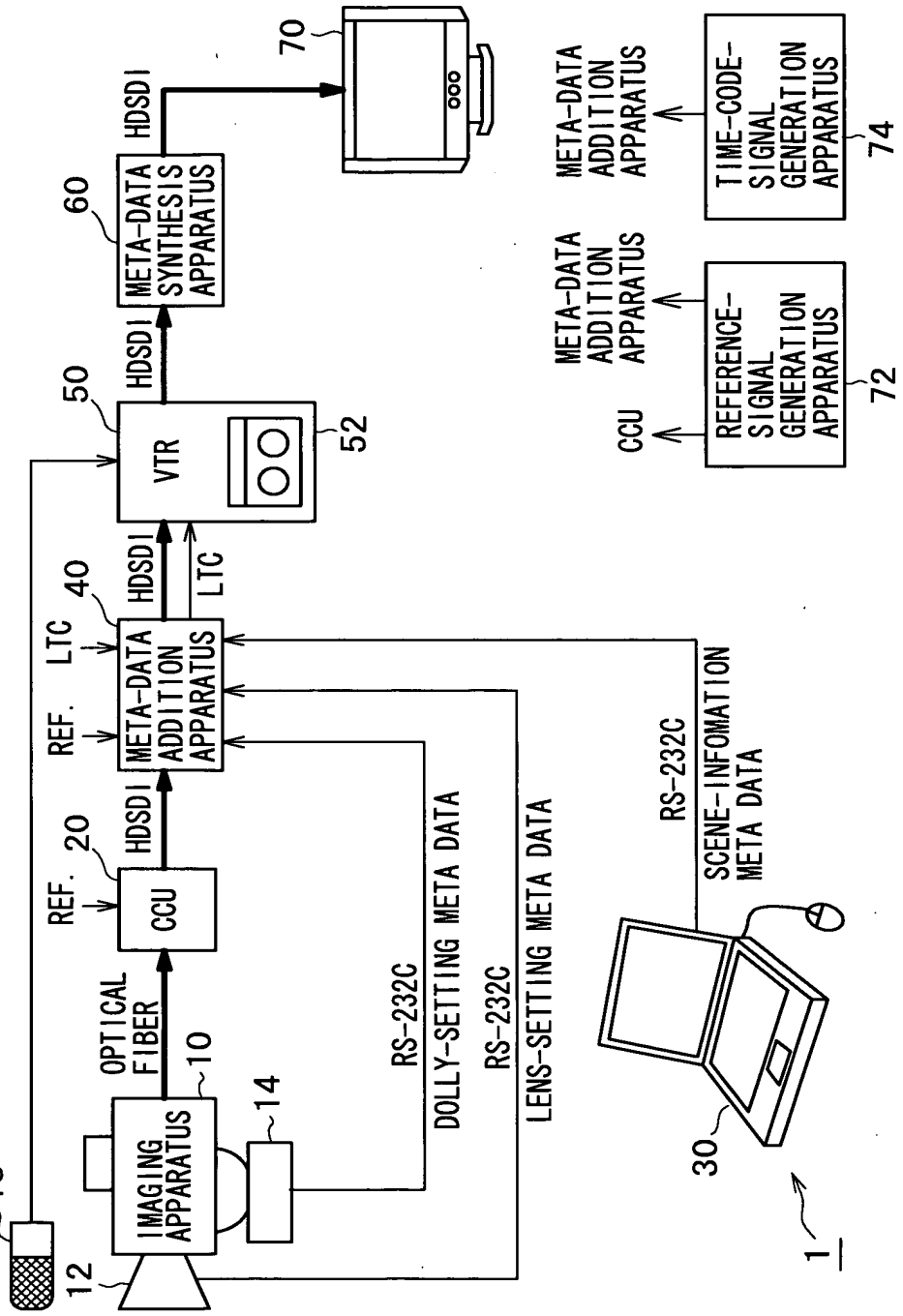

70
60
META-DATA SYNTHESIS APPARATUS
HDSDI
50
VTR
52
HDSDI
40
META-DATA ADDITION APPARATUS
REF.
LTC
HDSDI
LTC
20
CCU
REF.
OPTICAL FIBER
10
IMAGING APPARATUS
14
18
12
RS-232C
DOLLY-SETTING META DATA
RS-232C
LENS-SETTING META DATA
RS-232C
SCENE-INFOMATION META DATA
30
1
META-DATA ADDITION APPARATUS
TIME-CODE-SIGNAL GENERATION APPARATUS
74
META-DATA ADDITION APPARATUS
CCU
REFERENCE-SIGNAL GENERATION APPARATUS
72

FIG. 2

SCENE-INFORMATION GROUP

ITEM	DATA AMOUNT (BYTES)	CONTENTS
TIME CODE	16	xx:xx:xx:xx
DATE	4	2002.10.15
VIDEO-WORK TITLE	30	MOON WARS EPISODE V
SHOOTING-TEAM NUMBER	2	xxxx
SCENE NUMBER	2	0003
TAKE NUMBER	2	0017
ROLL NUMBER	2	0005
CAMERAMAN	16	BOB MEYERS
DIRECTOR	16	MIKEL BUSH
PRODUCER	16	GEORGE JHORDAN

FIG. 3

CAMERA-SETTING GROUP

ITEM	DATA AMOUNT (BYTES)	CONTENTS
CAMERA ID	4	00010335
CHU SWITCH ON/OFF	1	ON=1, OFF=2
CCU ID	4	00010750
FILTER SETTING	2	5(A, B, C, D, E) ×5(1, 2, 3, 4, 5)
SHUTTER SPEED	1	xxxx(1/100/125/250/500/1000/2000)
GAIN	1	M-90～+99
ECS FUNCTION ON/OFF	2	ON=1, OFF=2
GAMMA (MASTER)	2	xxx
GAMMA (USER SETTING)	1	xxx
VARIABLE FRAME RATE	1	23.98～30P
VIDEO-SIGNAL WHITE LEVEL	6	R/G/B/-99～+99
VIDEO-SIGNAL BLACK LEVEL	8	R/G/B/M-99～+99
DETAIL LEVEL	2	-99～+99
KNEE POINT	2	-99～+99
KNEE SLOPE	2	-99～+99
RECORDER STATUS	1	23.98～30P

FIG. 4

LENS-SETTING GROUP

ITEM	DATA AMOUNT (BYTES)	CONTENTS
ZOOM	2	7.8～144xxxx
FOCUS	2	1～∞xxxx
IRIS	2	C～1.9xxxx
LENS ID	4	00010335

FIG. 5

DOLLY-SETTING GROUP

ITEM	DATA AMOUNT (BYTES)	CONTENTS
GPS	12	xx:xx:xx/yy/hh
MOVEMENT DIRECTION	4	xx'xx'xx''ANGLE
MOVEMENT SPEED	4	xx(m/s)
CAMERA DIRECTION PAN(Z)	2	320°
TILT(Y)	2	±35°
ROLL(X)	2	±35°
DOLLY HEIGHT	2	xxx(m)
DOLLY ID	4	00010335

FIG. 6A

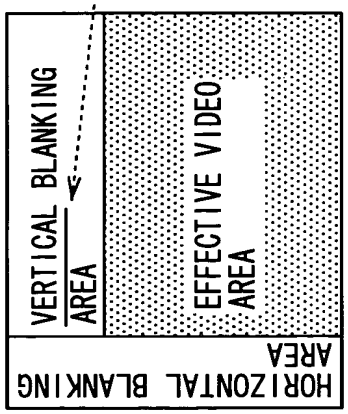

VERTICAL BLANKING AREA
EFFECTIVE VIDEO AREA
HORIZONTAL BLANKING AREA

FIG. 6B

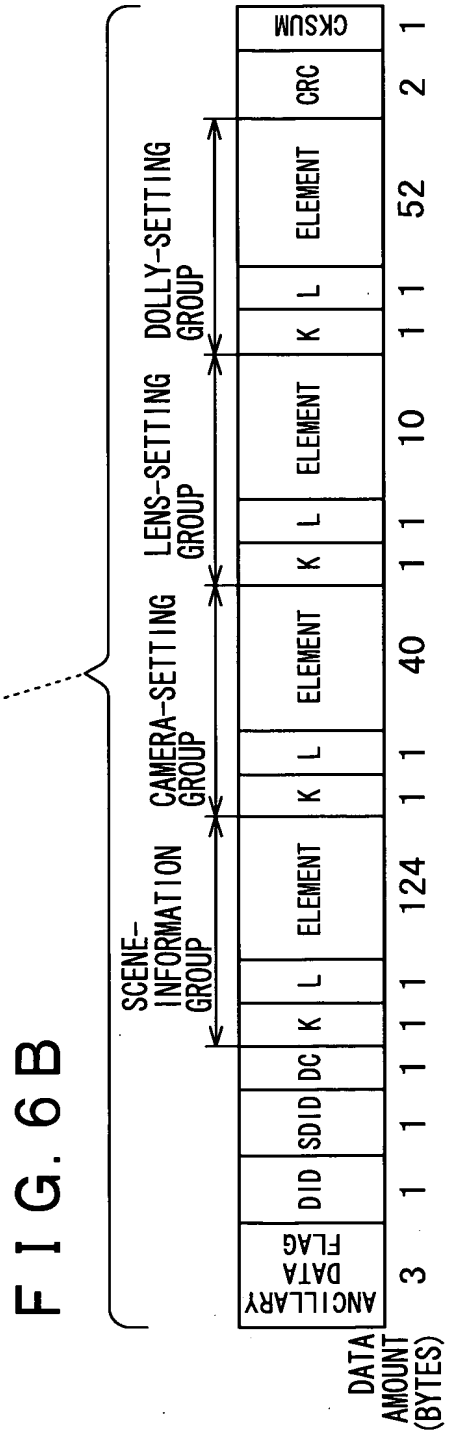

SCENE-INFORMATION GROUP
CAMERA-SETTING GROUP
LENS-SETTING GROUP
DOLLY-SETTING GROUP
ANCILLARY DATA FLAG
DID
SDID
DC
K
L
ELEMENT
CRC
CKSUM
DATA AMOUNT (BYTES)
3
1
1
1
1
1
1
124
1
1
40
1
1
10
1
1
52
2
1

FIG. 7

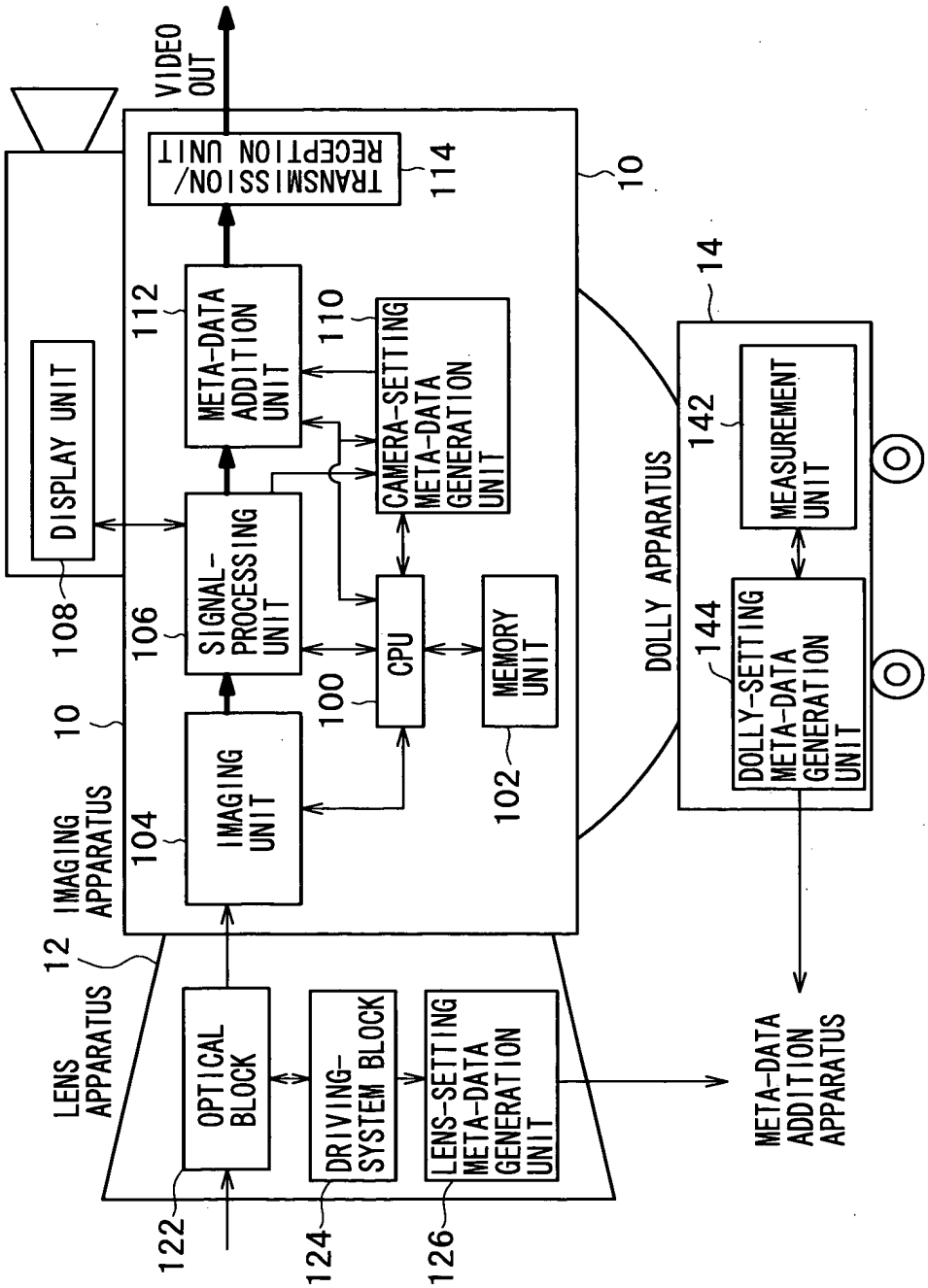

VIDEO OUT
TRANSMISSION/ RECEPTION UNIT
114
10
META-DATA ADDITION UNIT
112
CAMERA-SETTING META-DATA GENERATION UNIT
110
14
DISPLAY UNIT
108
SIGNAL-PROCESSING UNIT
106
CPU
100
MEMORY UNIT
102
MEASUREMENT UNIT
142
DOLLY APPARATUS
144
DOLLY-SETTING META-DATA GENERATION UNIT
IMAGING APPARATUS
10
IMAGING UNIT
104
12
LENS APPARATUS
OPTICAL BLOCK
DRIVING-SYSTEM BLOCK
LENS-SETTING META-DATA GENERATION UNIT
META-DATA ADDITION APPARATUS
122
124
126

FIG. 8A

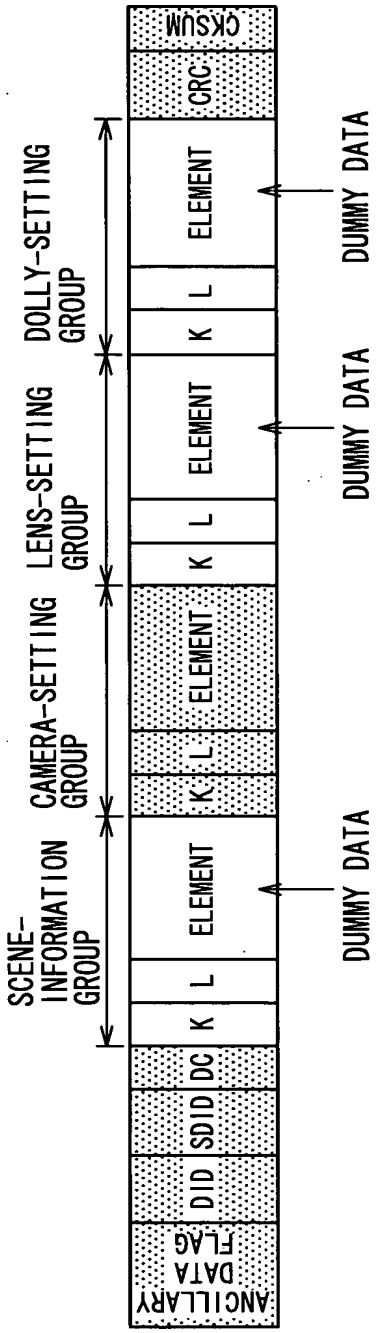

ANCILLARY DATA FLAG
DID
SDID
DC
K
L
ELEMENT
K
L
ELEMENT
K
L
ELEMENT
K
L
ELEMENT
CRC
CKSUM
SCENE-INFORMATION GROUP
CAMERA-SETTING GROUP
LENS-SETTING GROUP
DOLLY-SETTING GROUP
DUMMY DATA
DUMMY DATA
DUMMY DATA

FIG. 8B

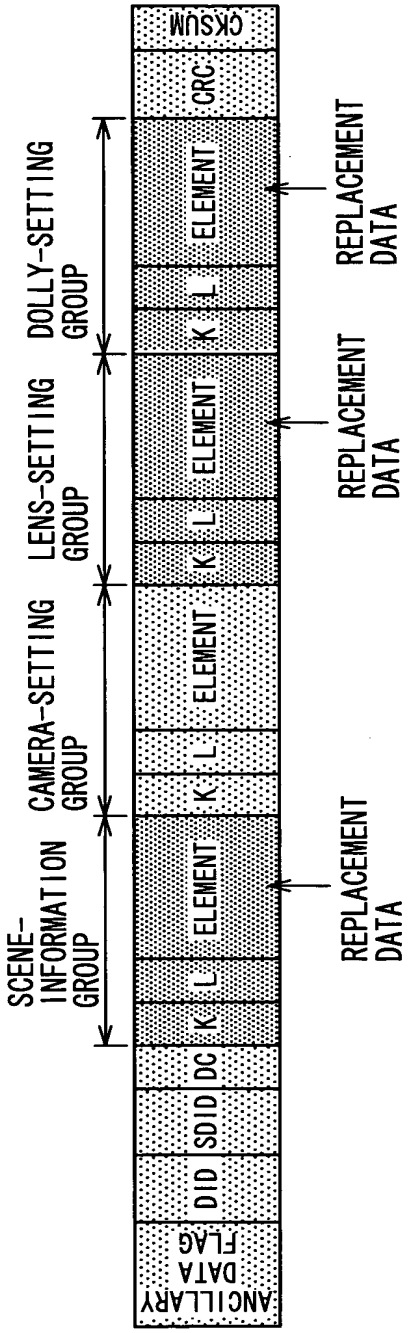

ANCILLARY DATA FLAG
DID
SDID
DC
K
L
ELEMENT
K
L
ELEMENT
K
L
ELEMENT
K
L
ELEMENT
CRC
CKSUM
SCENE-INFORMATION GROUP
CAMERA-SETTING GROUP
LENS-SETTING GROUP
DOLLY-SETTING GROUP
REPLACEMENT DATA
REPLACEMENT DATA
REPLACEMENT DATA

FIG. 9

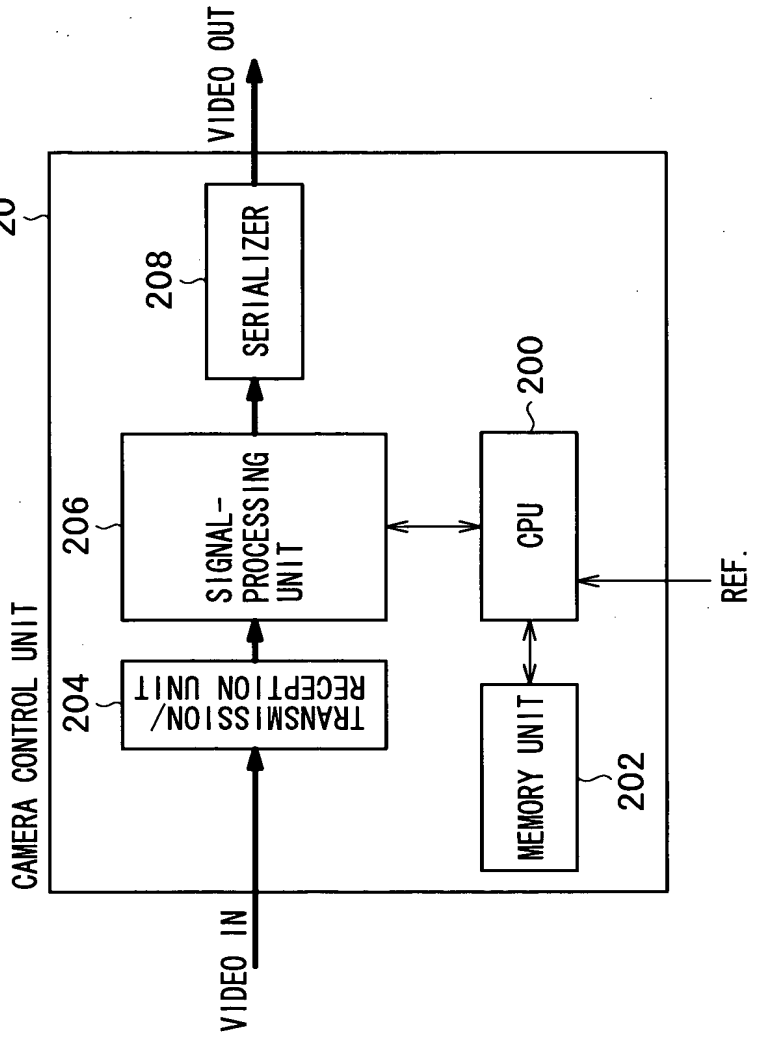

VIDEO OUT
20
208
SERIALIZER
200
206
SIGNAL-PROCESSING UNIT
CPU
REF.
CAMERA CONTROL UNIT
204
TRANSMISSION/RECEPTION UNIT
MEMORY UNIT
202
VIDEO IN

FIG. 10

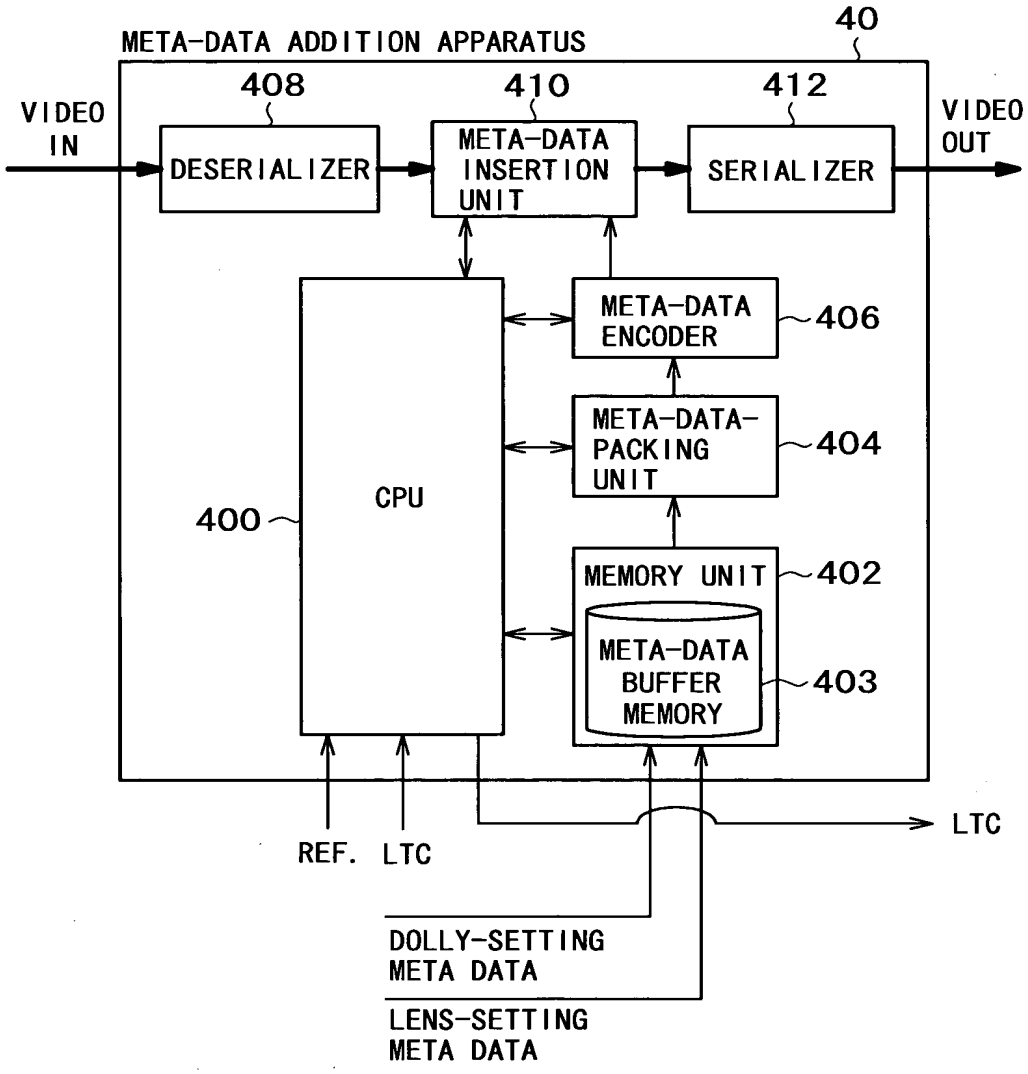

META-DATA ADDITION APPARATUS
40
408
410
412
VIDEO IN
DESERIALIZER
META-DATA INSERTION UNIT
SERIALIZER
VIDEO OUT
META-DATA ENCODER
406
META-DATA-PACKING UNIT
404
CPU
400
MEMORY UNIT
402
META-DATA BUFFER MEMORY
403
REF.
LTC
LTC
DOLLY-SETTING META DATA
LENS-SETTING META DATA

FIG. 11

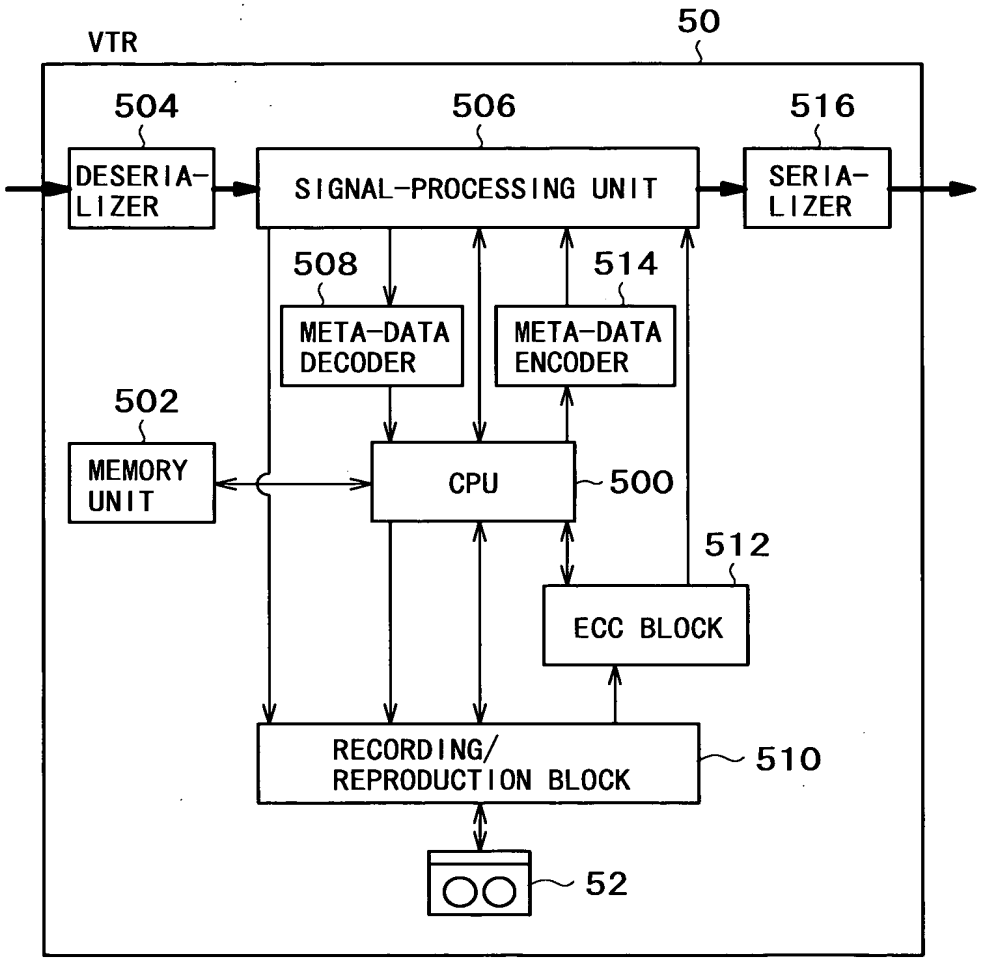

VTR
50
504
506
516
DESERIA-LIZER
SIGNAL-PROCESSING UNIT
SERIA-LIZER
508
514
META-DATA DECODER
META-DATA ENCODER
502
MEMORY UNIT
CPU
500
512
ECC BLOCK
RECORDING/ REPRODUCTION BLOCK
510
52

FIG. 12

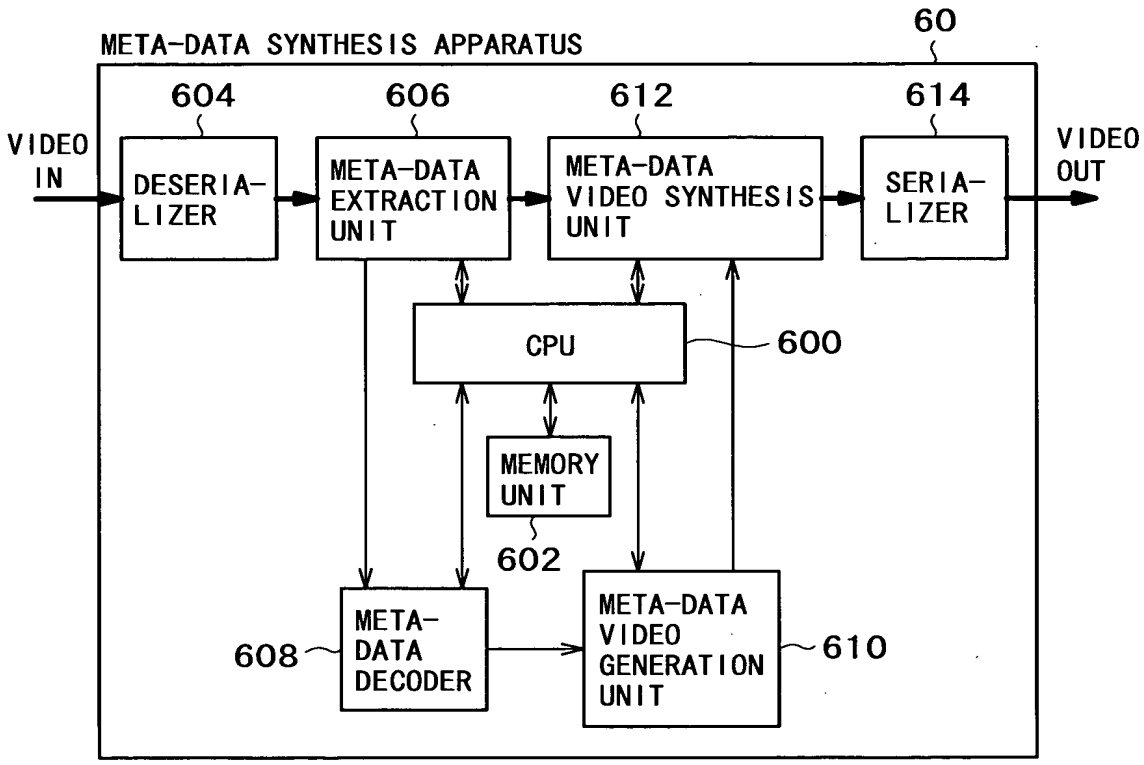

META-DATA SYNTHESIS APPARATUS
60
604
606
612
614
VIDEO IN
DESERIA-LIZER
META-DATA EXTRACTION UNIT
META-DATA VIDEO SYNTHESIS UNIT
SERIA-LIZER
VIDEO OUT
CPU
600
MEMORY UNIT
602
608
META-DATA DECODER
META-DATA VIDEO GENERATION UNIT
610

FIG. 13A

FIG. 13B

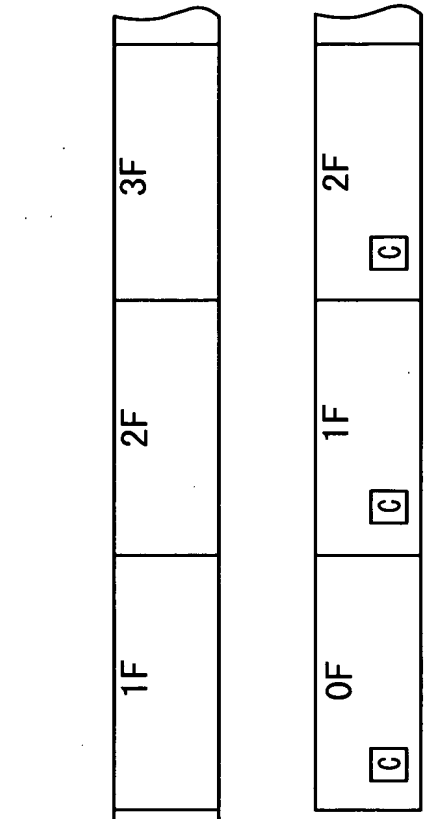


FIG. 13C

FIG. 13D

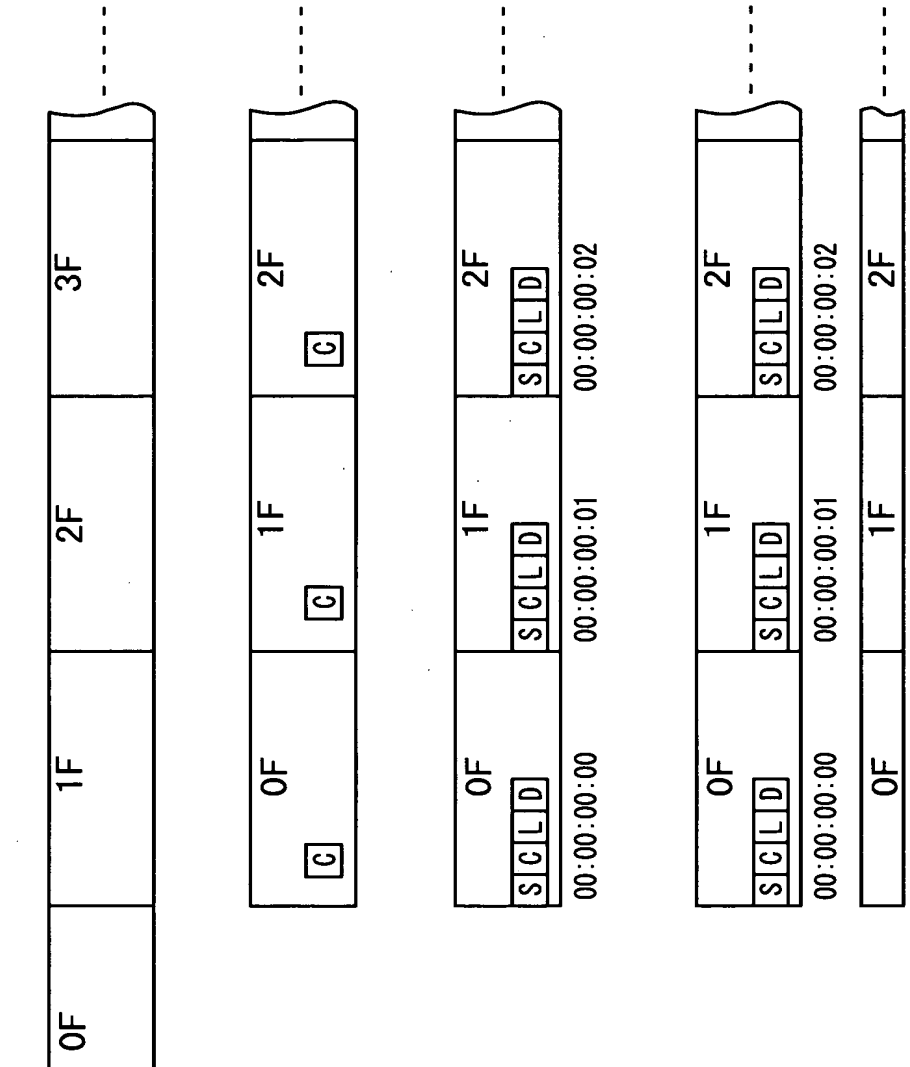


FIG. 14

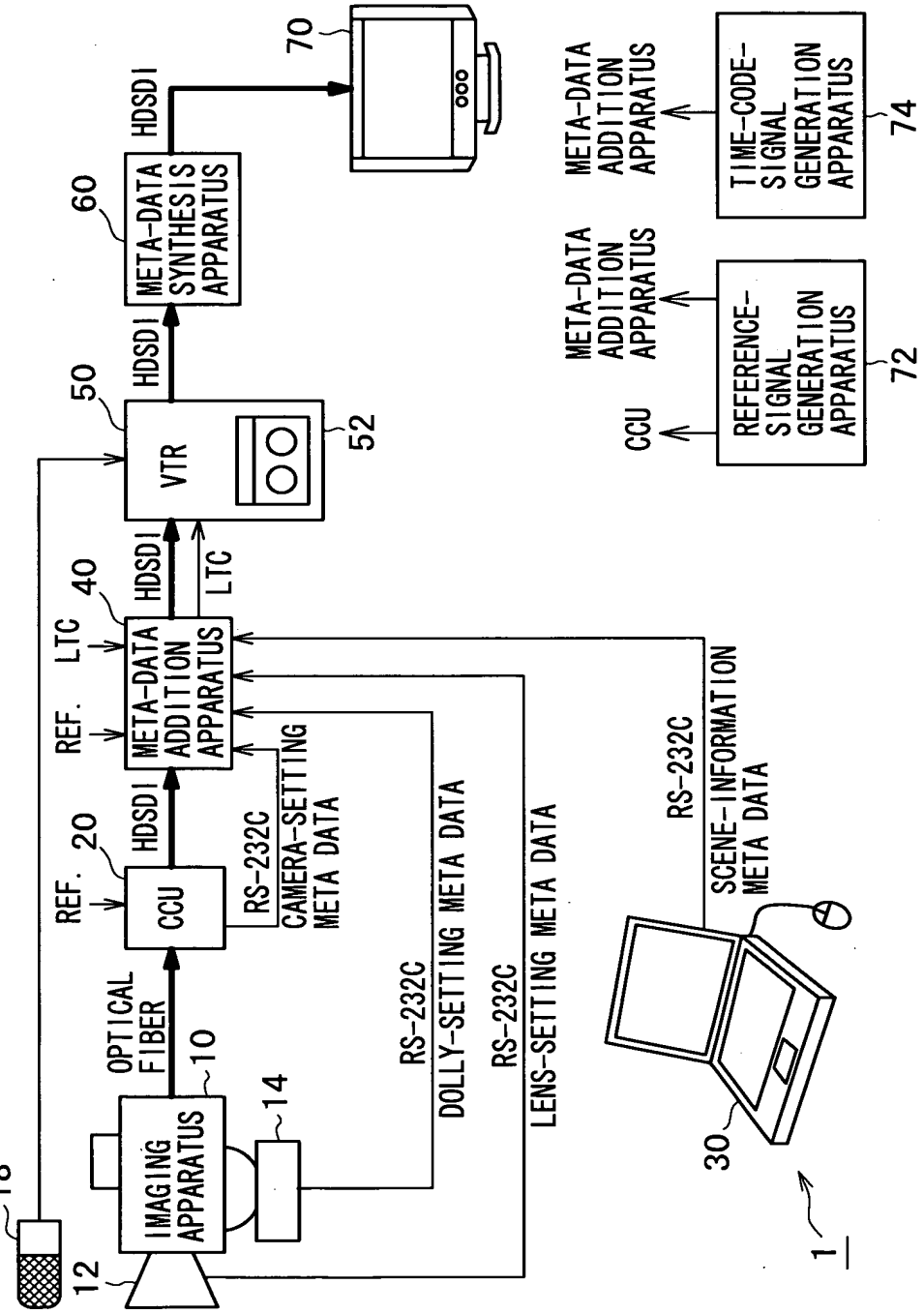

IMAGING APPARATUS
12
18
OPTICAL FIBER
10
14
CCU
20
REF.
HDSDI
RS-232C
CAMERA-SETTING META DATA
RS-232C
DOLLY-SETTING META DATA
RS-232C
LENS-SETTING META DATA
META-DATA ADDITION APPARATUS
40
REF.
LTC
HDSDI
LTC
VTR
50
52
HDSDI
META-DATA SYNTHESIS APPARATUS
60
HDSDI
70
RS-232C
SCENE-INFORMATION META DATA
30
1
CCU
REFERENCE-SIGNAL GENERATION APPARATUS
72
META-DATA ADDITION APPARATUS
META-DATA ADDITION APPARATUS
TIME-CODE-SIGNAL GENERATION APPARATUS
74

FIG. 15

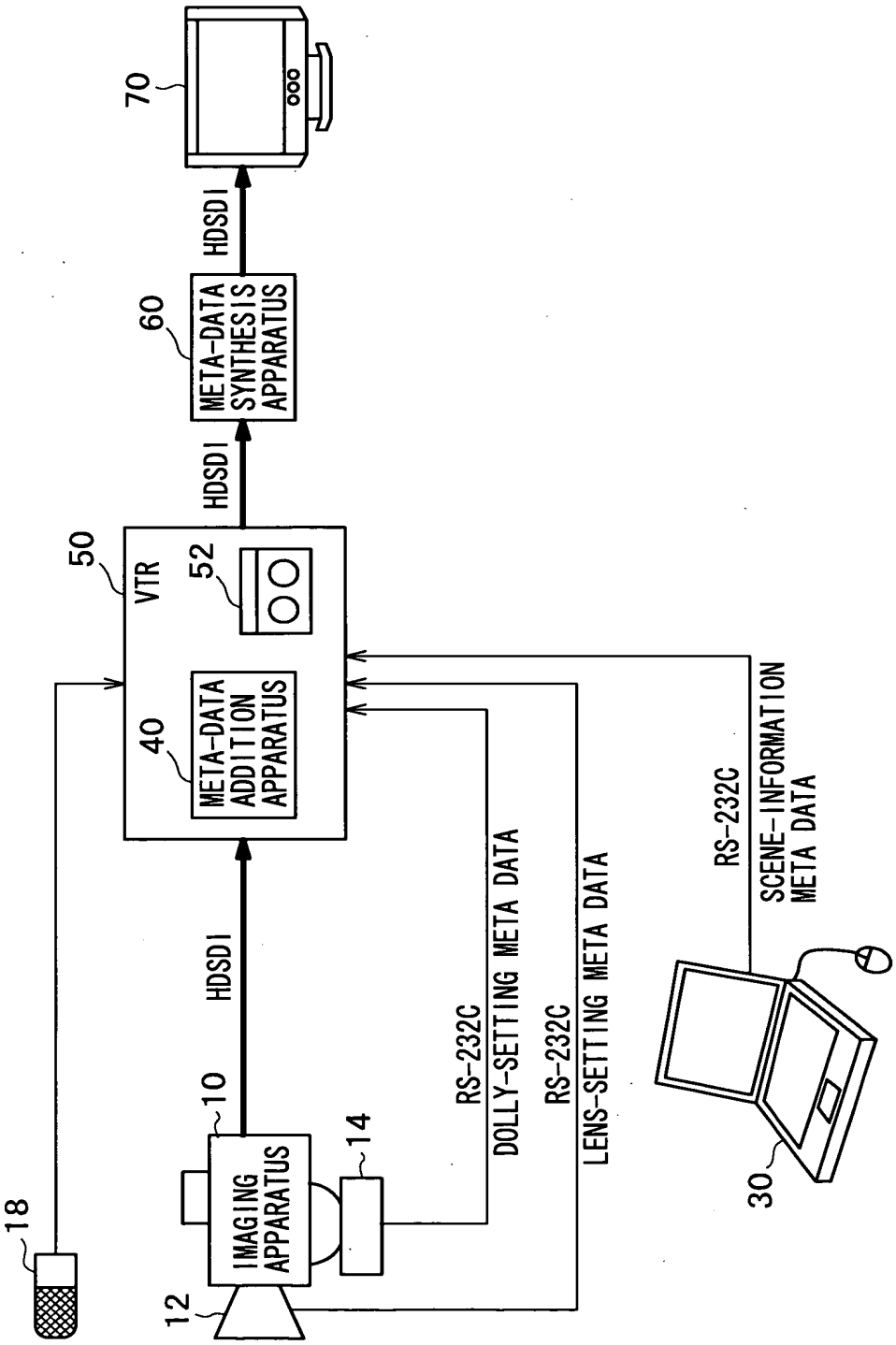
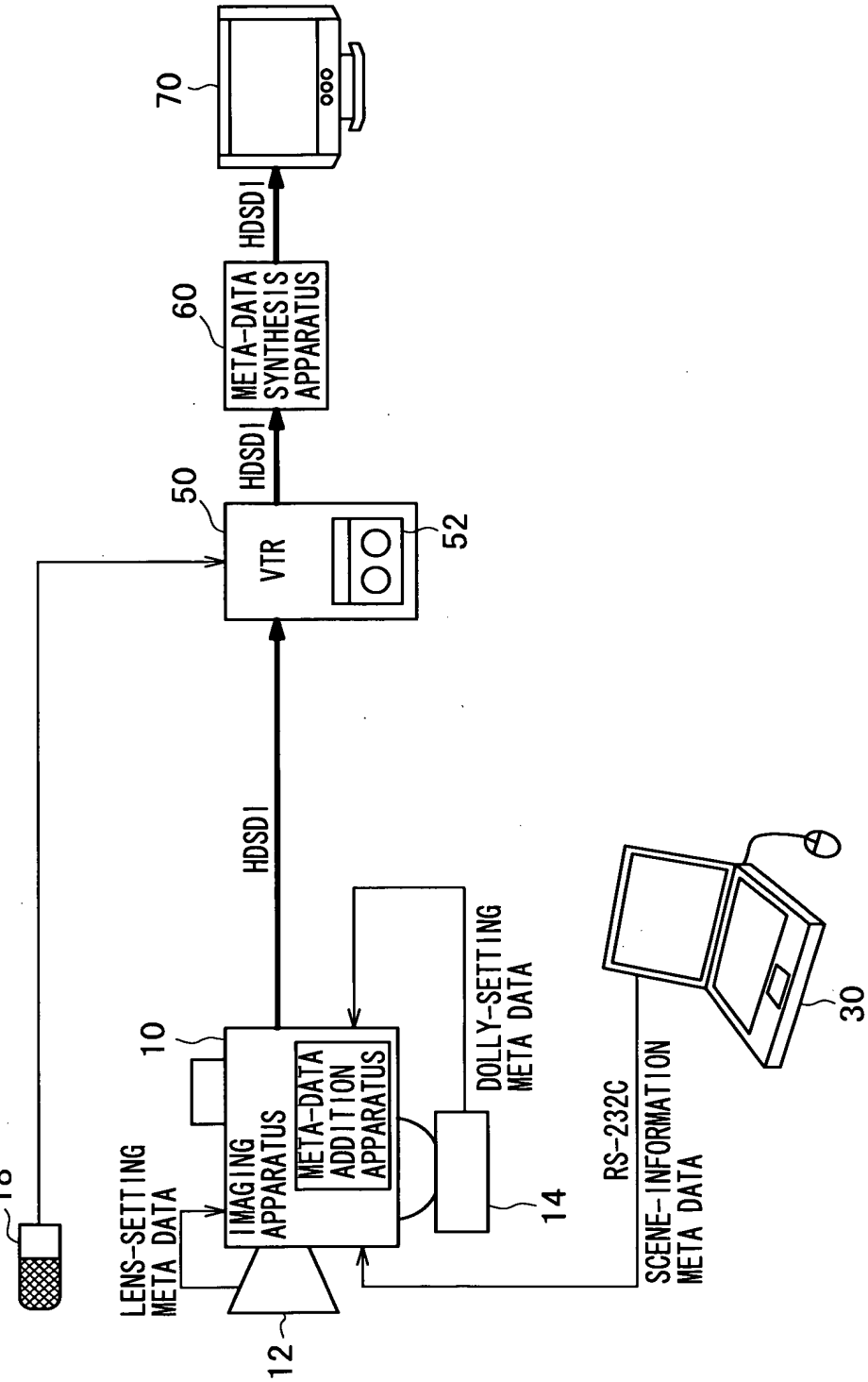

70
HDSDI
60
META-DATA SYNTHESIS APPARATUS
HDSDI
50
VTR
52
40
META-DATA ADDITION APPARATUS
HDSDI
10
IMAGING APPARATUS
14
12
18
RS-232C
DOLLY-SETTING META DATA
RS-232C
LENS-SETTING META DATA
RS-232C
SCENE-INFORMATION META DATA
30

FIG. 16


70
HDSDI
60
META-DATA SYNTHESIS APPARATUS
HDSDI
50
VTR
52
HDSDI
10
IMAGING APPARATUS
META-DATA ADDITION APPARATUS
DOLLY-SETTING META DATA
14
RS-232C
SCENE-INFORMATION META DATA
30
LENS-SETTING META DATA
18
12